MUTATION RESEARCH

International journal on mutagenesis, chromosome breakage and related subjects

Vol. 45 (1977)

Mutation Research

INTERNATIONAL JOURNAL ON MUTAGENESIS, CHROMOSOME BREAKAGE AND RELATED SUBJECTS

MANAGING EDITOR: F.H. Sobels, *Leiden*

ASSOCIATE EDITORS:
A. Rörsch, *Leiden*, F.J. de Serres, *Research Triangle Park, N.C.*

ASSISTANT EDITOR: K. Sankaranarayanan, *Leiden*

EDITORIAL BOARD

F. d'Amato, *Pisa*
C. Auerbach, *Edinburgh*
D. Bootsma, *Waddinxveen*
R.C. von Borstel, *Edmonton, Alberta*
J.G. Brewen, *Oak Ridge, Tenn.*
B.A. Bridges, *Brighton*
E.H.Y. Chu, *Ann Arbor, Mich.*
A.M. Clark, *Adelaide*
A.D. Conger, *Philadelphia, Pa.*
D. Roy Davies, *Norwich*
H.J. Evans, *Edinburgh*
W. Harm, *Dallas, Tex.*
J.A. Heddle, *Toronto*
A. Hollaender, *Washington, D.C.*
R. Holliday, *London*
F. Kaudewitz, *Munich*
B.A. Kihlman, *Uppsala*
B.J. Kilbey, *Edinburgh*
R.F. Kimball, *Oak Ridge, Tenn.*
S. Kondo, *Osaka*
W.R. Lee, *Baton Rouge, La.*
A. Léonard, *Mol*
P.H.M. Lohman, *Rijswijk*
N. Loprieno, *Pisa*
N.V. Luchnik, *Obninsk*
K.G. Lüning, *Stockholm*
M.F. Lyon, *Harwell*
G.E. Magni, *Milan*
H.V. Malling *Research Triangle Park, N.C.*
J.A. Miller, *Madison, Wisc.*
E. Moustacchi, *Orsay*
Á. Nasim, *Ottawa*
W.W. Nichols, *Camden, N.J.*
R.A. Nilan, *Pullman, Wash.*
G. Oliveri, *Rome*
D.R. Parker, *Riverside, Calif.*
M. Radman, *Rhode St. Genèse*
R. Rieger, *Gatersleben*
J.J. Roberts, *Chalfont St. Giles*
L.B. Russell, *Oak Ridge, Tenn.*
D. Scott, *Manchester*
A.G. Searle, *Harwell*
J.W.I.M. Simons, *Leiden*
H.H. Smith, *Upton, N.Y.*
Y. Tazima, *Misima*
D. von Wettstein, *Copenhagen*
S. Wolff, *San Francisco, Calif.*
F.E. Würgler, *Zurich*

Vol. 45 1977

ELSEVIER

© ELSEVIER/NORTH-HOLLAND BIOMEDICAL PRESS, 1977

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of the copyright owner.

Mutation Research, 45 (1977) 359—361
© Elsevier/North-Holland Biomedical Press

CONTENTS

VOLUME 45 (1977)

Spontaneous, ultraviolet and ionizing radiation mutagenesis in two auxotrophic strains of *Salmonella typhimurium* carrying an R plasmid
by D.G. MacPhee (Bundoora, Australia) (Rec'd 15 Apr., 1977) . . . . . 1—6

Comparison of the genetic activity of aflatoxins B_1 and G_1 in *Escherichia coli* and *Saccharomyces cerevisiae*
by D.F. Callen, G.R. Mohn and T.-M. Ong (Research Triangle Park, N.C., U.S.A.) (Rec'd 16 June, 1977) . . . . . 7—11

Repair or pyrimidine dimers in radiation-sensitive mutants *rad3*, *rad4*, *rad6* and *rad9* of *Saccharomyces cerevisiae*
by L. Prakash (Rochester, N.Y., U.S.A.) (Rec'd 12 Apr., 1977) . . . . . 13—20

The induction of mutations to 2-thioxanthine resistance in inhibitor depleted conidia of *Aspergillus nidulans* γ-radiation in the presence of oxygen or nitrogen
by B.R. Scott, T. Alderson and D.G. Papworth (Didcot, Great Britain) (Rec'd 13 Dec., 1976) . . . . . 21—30

Production of mosaic lethals in different germ cell stages of Drosophila by *N*-methyl-*N'*-nitro-*N*-nitrosoguanidine
by M.F. Sadiq and C. Mathew (Amman, Jordan) (Rec'd 26 Apr., 1977) . . . . 31—39

A protective effect of caffeine on Drosophila larvae treated with methyl methanesulfonate
by J. Nigsch, F.E. Würgler and U. Graf (Zürich, Switzerland) (Rec'd 3 Febr., 1977) . . . . . 41—45

The mutational spectrum of procarbazine in *Drosophila melanogaster*
by W.G.H. Blijleven and E. Vogel (Leiden, The Netherlands) (Rec'd 18 Febr., 1977) . . . . . 47—59

Dose—response relationship for radiation-induced translocations in somatic and germ cells of mice
by P.P.W. Van Buul (Leiden, The Netherlands) (Rec'd 13 Jan., 1977) . . . . . 61—68

The chromosomal radiosensitivity of lymphocytes from the chimpanzee (*Pan troglodytes*)
by A. Léonard, G. Decat, E.D. Léonard and J. Mortelmans (Mol and Antwerp, Belgium) (Rec'd 7 Apr., 1977) . . . . . 69—76

Chromosomal abnormalities in lymphocytes from monkeys poisoned with lead
by Gh. Deknudt, A. Colle and G.B. Gerber (Mol, Belgium and Marseille, France) (Rec'd 19 Apr., 1977) . . . . . 77—83

Sister chromatid exchanges in Down syndromes and normal human beings
by E.A. Lezana, N.O. Bianchi, M.S. Bianchi and J.E. Zabala-Suarez (La Plata, Argentina) (Rec'd 10 May, 1977) . . . . . 85—90

A quantitative assay of mutation induction at the hypoxanthine-guanine phosphoribosyl transferase locus in Chinese hamster ovary cells (CHO/HGPRT system): development and definition of the system
by J.P. O'Neill, P.A. Brimer, R. Machanoff, G.P. Hirsch and A.W. Hsie (Oak Ridge, Tenn., U.S.A.) (Rec'd 2 June 1977) . . . . . 91—101

A quantitative assay of mutation induction at the hypoxanthine-guanine phosphoribosyl transferase locus in Chinese hamster ovary cells (CHO/HGPRT system): utilization with a variety of mutagenic agents
by J.P. O'Neill, D.B. Couch, R. Machanoff, J.R. San Sebastian, P.A. Brimer and A.W. Hsie (Oak Ridge Tenn., U.S.A.) (Rec'd 2 June 1977) . . . . . 103—109
Mutagenesis by Simian Virus 40. II. Changes in substrate affinities in mutant hypoxanthine-guanine phosphoribosyl transferase enzymes at different pH values
by M. Theile and M. Strauss (Berlin-Buch, G.D.R.) (Rec'd 19 Apr., 1977) . . . 111—123
Mutagenic and epigenetic influence of caffeine on the frequencies of UV-induced ouabain-resistant Chinese hamster cells
by C.-C. Chang, C. Phillips, J.E. Trosko and R.W. Hart (East Lansing, Mich. and Columbus, Ohio, U.S.A.) . . . . . 125—136
Evidence for inactivation of DNA repair in frozen and thawed mammalian cells
by H. Slor, T. Lev-Sobe and E.C. Friedberg (Tel Aviv, Israel and Stanford, Calif., U.S.A.) (Rec'd 21 Apr., 1977) . . . . . 137—145
Is DNA polymerase I necessary for most UV-induced mutation from tryptophan auxotrophy in *Escherichia coli* B/r WP2?
by C.O. Doudney (Albany, N.Y., U.S.A.) (Rec'd 18 Febr., 1977) . . . . . 147—152
Effect of tumor promoting agents on mutation frequencies in cultured V79 Chinese hamster cells
by G.R. Lankas, Jr., C.S. Baxter and R.T. Christian (Cincinnati, Ohio, U.S.A.) (Rec'd 31 May, 1977) . . . . . 153—156
Effect of caffeine on sister chromatid exchanges and chromosomal aberrations induced by mutagens in Chinese hamster cells
by F. Palitti and A. Becchetti (Rome, Italy) . . . . . 157—159
Phage yield during W-reactivation of bacteriophage λ
by P. Caillet-Fauquet and M. Defais (Rhode-St.-Genèse, Belgium) (Rec'd 5 May 1977) . . . . . 161—167
Molecular-genetic effect of cadmium chloride
by G.D. Zasukhina, T.A. Sinelschikova, G.N. Lvova and Z.S. Kirkova (Moscow, U.S.S.R.) (Rec'd 16 June 1977) . . . . . 169—174
Evaluation of genetic risks of alkylating agents III. Alkylation of haemoglobin after metabolic conversion of ethene to ethene oxide in vivo
by L. Ehrenberg, S. Osterman-Golkar, D. Segerbäck, K. Svensson and C.J. Calleman (Stockholm, Sweden) (Rec'd 22 June 1977) . . . . . 175—184
Spontaneous mutability in UV-sensitive excision-defective strains of Saccharomyces
by Teresa Brychcy and R.C. von Borstel (Edmonton, Alberta, Canada) (Rec'd 22 April 1977) . . . . . 185—194
Somatic mutation frequencies in the stamen hairs of stable and mutable clones of Tradescantia after acute gamma-ray treatments with small doses
by Sadao Ichikawa and Catarina S. Takahashi (Kyoto, Japan) (Rec'd 8 June 1977) . . . . . 195—204
Change of chromatid- to chromosome-type aberrations by prolonging the G_1 cell phase after treatment with diethyl sulphate
by T. Gichner and J. Velemínský (Prague, Czechoslovakia) (Rec'd 14 June 1977) . . . . . 205—211
Cytological analysis of X-ray-induced aberrations in spermatocytes I and the somatic ganglia of male *Drosophila melanogaster*
by M.P. Belloni, R. Cozzi, A. de Marco, G.Pichler and O. Venezia (Rome, Italy) (Rec'd 26 May 1977) . . . . . 213—222
The radiosensitivity of chromosomes of rabbit lymphocytes
by A. Léonard, G.B. Gerber, G. Decat and E.D. Léonard (Mol, Belgium) (Rec'd 22 April 1977) . . . . . 223—231
Cytogenetic assays of chemical clastogens using mammalian cells in culture
by T.C. Hasu, Cheryl J. Collie, Andrea F. Lusby and Dennis A. Johnston (Houston, Texas, U.S.A.) (Rec'd 10 June 1977) . . . . . 233—247

Cytogenic findings in pernicious anaemia. Comparison between results obtained with chromosome studies and the micronucleus test
by Mogens Krogh Jensen (Aalborg, Denmark) (Rec'd 21 April 1977) ..... 249—252
Induction of sister chromatid exchanges in xeroderma pigmentosum cells after exposure to ultraviolet light
by E.A. de Weerd-Kastelein, W. Keijzer, G. Rainaldi and D. Bootsma (Rotterdam, The Netherlands, and Pisa, Italy) (Rec'd 18 May 1977) ..... 253—261
Induction of sister chromatid exchanges in Chinese hamster cells by carcinogenic mutagens requiring metabolic activation
by Shin Takehisa and Sheldon Wolff (San Francisco, Calif., U.S.A.) (Rec'd 30 March 1977) ..... 263—270
Further evidence for the genetic origin of mutations in mammalian somatic cells: the effects of ploidy level and selection stringency on dose-dependent chemical mutagenesis to purine analogue resistance in Chinese hamster ovary cells
by Abraham W. Hsie, Patricia A. Brimer, Richard Machanoff and Mayphoon H. Hsie (Oak Ridge, Tenn., U.S.A.) (Rec'd 13 April 1977) ..... 271—282
Mutagenicity of acrylonitrile (cyanoethylene) in *Escherichia coli*
by S. Venitt, C.T. Bushell and M. Osborne (Chalfont St. Giles, Bucks., Great Britain) (Rec'd 2 Feb. 1977) ..... 283—288
Errata ..... 289—290
Intrasanguine host-mediated assay with *Salmonella typhimurium*
by P. Arni, Th. Mantel, E. Deparade and D. Müller (Basle, Switzerland)(Rec'd 29 June 1977) ..... 291—307
Cytochrome P-450 and the activation of promutagens in *Saccharomyces cerevisiae*
by D.F. Callen and R.M. Philpot (Research Triangle Park, N.C., U.S.A.) (Rec'd 21 June 1977) ..... 309—324
The induction of chromosome aberrations in mouse dictyate oocytes by X-rays and chemical mutagens
by Allan Caine and Mary F. Lyon (Harwell, Oxon, Great Britain) (Rec'd 24 June 1977) ..... 325—331
A fluence response study of lethality and mutagenicity of white, black and blue fluorescent light, sunlamp, and sunlight irradiation in Chinese hamster ovary cells
by Abraham W. Hsie, Albert P. Li and Richard Machanoff (Oak Ridge, Tenn., U.S.A.) (Rec'd 3 July 1977) ..... 333—342
Ataxia telangiectasia: The effects of chemical mutagens and X-rays on sister chromatid exchanges in blood lymphocytes
by Sheila M. Galloway (Edinburgh, Scotland) (Rec'd 28 June 1977) ..... 343—349
Intergeneric mating: transfer of *polA* gene from *E. coli* to *S. typhimurium*
by N.F. Korenevskaya, I.V. Andreeva, A.A. Kiryushkina, L.Ya. Lichoded, Yu.S. Kondratiev and A.G. Skavronskaya (Moscow, U.S.S.R.) (Rec'd 4 July 1977) ..... 351—354
II—III Translocations induced by diethyl sulfate in mature sperm of *Drosophila melanogaster*
by Enzo R. Muñoz and Beatriz Mazar Barnett (Buenos Aires, Argentina) (Rec'd 2 August 1977) ..... 355—357

Contents, Vol. 45 (1977) ..... 359—361

Author Index, Vol. 45 (1977) 362

Subject Index, Vol. 45 (1977) ..... 363—370

Mutation Research, 45 (1977) 362
© Elsevier/North-Holland Biomedical Press

AUTHOR INDEX

VOLUME 45 (1977)

Alderson, T., 21
Andreeva, I.V., 351
Arni, P., 291

Barnett, B.M., 355
Baxter, C.S., 153
Becchetti, A., 157
Belloni, M.P., 213
Bhatia, C.R., 289
Bianchi, M.S., 85
Bianchi, N.O., 85
Blijleven, W.G.H., 47
Bootsma, D., 253
Brimer, P.A., 91, 103, 271
Brychy, T., 185
Bushell, C.T., 283

Caillet-Fauquet, P., 161
Caine, A., 325
Calleman, C.J., 175
Callen, D.F., 7, 309
Chang, C.-C., 125
Christian, R.T., 153
Colle, A., 77
Collie, C.J., 233
Couch, D.B., 103
Cozzi, R., 213

Decat, G., 69, 223
Defais, M., 161
Deknudt, Gh., 77
De Marco, A., 213
Deparade, E., 291
De Weerd-Kastelein, E.A., 253
Doudney, C.O., 147

Ehrenberg, L., 175

Friedberg, E.C., 137

Galloway, S.M., 343
Geissler, E., 289
Gerber, G.B., 77, 223
Gichner, T., 205
Gopal-Ayengar, A.R., 289
Graf, U., 41

Hart, R.W., 125
Hirsch, G.P., 91
Hsie, A.W., 91, 271, 333
Hsie, M.H., 271
Hsu, T.C., 233

Ichikawa, S., 195

Jensen, M.K., 249
Johnston, D.A., 233

Keijzer, W., 253
Khalatkar, A.S., 289
Kirkova, Z.S., 169
Kiryushkina, A.A., 351
Kondratiev, Yu.S., 351
Korenevskaya, N.F., 351

Lankas Jr., G.R., 153
Lemontt, J.F., 289
Léonard, A., 69, 223
Léonard, E.D., 69, 223
Lev-Sobe, T., 137
Lezana, E.A., 85
Li, A.P., 333
Lichoded, L.Ya., 351
Lusby, A.F., 233
Lvova, G.N., 169
Lyon, M.F., 325

Machanoff, R., 91, 103, 271, 333
MacPhee, D.G., 1
Mantel, Th., 291
Mathew, C., 31
Mohn, G.R., 7
Mortelmans, J., 69
Müller, D., 291
Muñoz, E.R., 355

Nigsch, J., 41
Nils, R., 289

O'Neill, J.P., 91, 103
Ong, T.-M., 7
Osborne, M., 283
Osterman-Golkar, S., 175

Palitti, F., 157
Papworth, D.G., 21
Phillips, C., 125
Philpot, R.M., 309
Pichler, G., 213
Prakash, L., 13

Rainaldi, G., 253

Sadiq, M.F., 31
San Sebastian, J.R., 103
Scherneck, S., 289
Scott, B.R., 21
Segerbäck, D., 175
Selby, P.B., 290
Selby, P.R., 290
Sinelschikova, T.A., 169
Skavronskaya, A.G., 351
Slor, H., 137
Strauss, M., 111
Svensson, K., 175

Takahashi, C.S., 195
Takehisha, S., 263
Theile, M., 111, 289
Trosko, J.E., 125

Van Buul, P.P.W., 61
Velemínský, J., 205
Venezia, O., 213
Venitt, S., 283
Vogel, E., 47
Von Borstel, R.C., 185

Wolff, S., 263
Würgler, F.E., 41

Zabala-Suarez, J.E., 85
Zasukhina, G.D., 169